

Living the



seminar series

Program

May 6th, 2026 University of Eastern Finland

May 11th, 2026 University of Jyväskylä

May 20th, 2026 University of Helsinki

May 28th, 2026 Aalto University

June 3rd, 2026 Lappeenranta–Lahti University of Technology

June 10th, 2026 University of Oulu

June 17th, 2026 Tampere University

Living the DREAM Seminar series

UEF

Wednesday, May 6th, 2026, at 09:00 – 16:00

Snellmania, SN201

Zoom: <https://uef.zoom.us/j/69707049668?pwd=7b814JIij84T82v1JHKbu4e2dzxdka.1>

Meeting ID: 697 0704 9668

Passcode: 774588

Session 1

09:00 Welcome

09:05 Sobuz Rana *Nocturnal Heart Rate Variability Estimation from 3D Seismocardiography Using Deep Learning*

09:20 Zewen Zhuo *Instance Segmentation of Dendrites from 3D-Electron Microscopy Images*

09:35 Markus Tolvanen *Photoacoustic contrast for virus-like nanoparticles*

09:50 Karoliina Puronhaara *Utilising a learned forward operator in the inverse problem of photoacoustic tomography*

Coffee break

Session 2

10:30 Niilo Saarlemo *Image reconstruction methods for single photon emission computed tomography*

10:45 Mary Joy Erojo *Simulation of SPECT Myocardial Perfusion Imaging using numerical cardiac phantoms*

11:00 Razieh Azizi *Multi-Resolution Reconstruction for Extended Field-of-View in Cone-Beam CT*

11:15 Abdulazeez Afolabi *Bayesian state estimation of dynamic greenhouse gas emissions in facility scale from multi-open-path measurements*

Lunch

Session 3

13:00 Rajat Bansal *Motion Correction in k-space for ZTE fMRI*

13:15 Ebawak Wodajo *Bridging Scales: Adapting RAPSODI for High-Precision Rat Brain MRI-Histology Co-Registration*

13:30 Ali Farki *Forecasting Future Anatomies: Longitudinal Brain MRI-to-MRI Prediction*

13:45 Simo Heikkinen *Simulator for low-field MRI*

14:00 Shubo Yan *Advanced Data Analysis of Non-proton Metabolic Magnetic Resonance Imaging*

Coffee break

Session 4

14:45 Fatemeh Maleki Almani *A Dirichlet-to-Neumann map-based model reduction framework for three-dimensional electrical impedance tomography*

15:00 Ruslan Lagashkin *End-to-end electrical impedance tomography: custom sub-second hardware and lightweight neural networks*

15:15 Fatemeh Jalali *Patient-Specific Biomechanics in Late-Stage Knee Osteoarthritis: Gait, Load Distribution, and Pain*

15:30 Alexander K. Beattie *Measurement Modalities: Towards Measuring Human Movement Outside the Laboratory*

15:45 Closing words

16:00–17:30 Pizza and networking

Program of **Living the DREAM** seminar

To be held on **Monday, 11 May 2026**

in **Jyväskylä**, Agora building, room Ag A102 (Martti Ahtisaari)

and on **Zoom** at <https://jyufi.zoom.us/j/65389553933>

Session 1:

- 09:00 - Welcome speech (*G. Covi*)
- 09:05 - Talk 1: Trudinger's parabolic equation (*R. Anttila*)
- 09:20 - Talk 2: Discrete exterior calculus for phonon propagation in layered periodic structures (*M. Myyrä*)
- 09:35 - Talk 3: Tensor tomography in gas giant geometry (*E. Satukangas*)
- 09:50 - Talk 4: Quantitative discrete time hedging under initial insider information (*O. Hinkkanen*)

Coffee break

Session 2:

- 10:30 - Talk 5: Bio-optical inversion of satellite imagery of inland waters (*P. Naik*)
- 10:45 - Talk 6: Computational methods for analyzing layered paintings in hyperspectral images (*J. Riihimäki*)
- 11:00 - Talk 7: Horizontal and vertical regularity of elastic wave geometry (*P. Kirkkopelto*)
- 11:15 - Talk 8: Regularity for the geodesic X-ray transform in non-smooth geometry (*M. Manu*)

“Living the DREAM” Seminar (University of Helsinki)

Organizer: Gregor Hillers, gregor.hillers@helsinki.fi

20 May 2026, at 09:00 – 15:30, Kumpula Campus, Exactum, B121

08:30 – 09:00 Breakfast

Session 1

09:00 Welcome!!

09:05 **Inverse Obstacle Problems**, [Ziyao Zhao](#), Department of Mathematics and Statistics, University of Helsinki

09:20 **Wave Speed Recovery from Spectral Data in a (1+1)-Dimensional Wave Equation**, Antti Hannukainen¹, [Petr Kulikov](#)², Matti Lassas², Lauri Oksanen². ¹Department of Mathematics and Systems Analysis, Aalto University, ²Department of Mathematics and Statistics, University of Helsinki

09:35 **Calderón’s forward problem with singularities using darning processes**, [Eetu Halme](#), Petteri Piiroinen. Department of Mathematics and Statistics, University of Helsinki

09:50 **Dual-Grid Parameter Selection for Tomographic Inverse Problems**, [Chuyang Wu](#)

Coffee break

Session 2

10:30 **Improving reconstruction quality of Passive Gamma Emission Tomography**, [Huaiyu Li](#), Peter Dendooven. Helsinki Institute of Physics, University of Helsinki

10:45 **Artificial Intelligence Gamma Ray Imaging Detectors**, [Adeiza Anumah](#)¹, Peter Dendooven¹, Andreas Hauptmann². ¹Helsinki Institute of Physics, University of Helsinki, ²University of Oulu

11:00 **Detecting Emissions from Space - A New Unsupervised Method for Finding Emission Hotspots from Satellite Data**, [Elias Ervelä](#)^{1,2}, Laia Amorós², Amanita Mikkonen², Johanna Tamminen². ¹Department of Mathematics and Statistics, University of Helsinki, ²Finnish Meteorological Institute

11:15 **Methodological Advances in Satellite-Based Point-Source Greenhouse Gas Emission Estimation**, [Anssi Koskinen](#). University of Helsinki, and Finnish Meteorological Institute

Lunch

Session 3

13:00 **Rayleigh wave focal spot imaging of the Kylylahti mine area**, Valtteri Hopiavuori¹, Christina Tsarsitalidou¹, Kauri Kolehmainen¹, Gregor Hillers¹, Bruno Giammarinaro², Pierre Boué³, Laurent Stehly³, Yang Lyu¹, Michal Malinowski⁴, Suvi Heinonen¹, Kari Komminaho¹. ¹Institute of Seismology, Department of Geosciences and Geography, University of Helsinki, ²LabTAU, INSERM, Université Claude Bernard Lyon 1, ³Institut des Sciences de la Terre, Université Grenoble Alpes, ⁴Geological Survey of Finland

13:15 **Deblurring seismic focal spot images**, Kauri Kolehmainen¹, Gregor Hillers¹, Hjørdis Schlüter², Bruno Giammarinaro³, Markus Juvonen², Alexander Meaney², Samuli Siltanen². ¹Institute of Seismology, University of Helsinki, ²Department of Mathematics and Statistics, University of Helsinki, ³LabTAU Inserm, University Claude Bernard Lyon 1

13:30 **Perception-based inversion methods**, Emilia Blåsten¹, Lílian Ferreira de Freitas, Jukka Häkkinen², Markus Juvonen³, Saara Malila³, Samuli Siltanen³. ¹Department of computational engineering, Lappeenranta University of Technology, ²Department of psychology, University of Helsinki, ³Department of Mathematics and Statistics, University of Helsinki

13:45 **Reconstructing the metric from relative distance comparisons** Mattias Lassas, Meri Laurikainen, Pekka Pankka. Department of Mathematics and Statistics, University of Helsinki

Coffee break

Session 4

14:30 **Expanding our understanding of street-level greenness: evaluation of mapping perceived greenery**, Jussi Torkko¹, Tuuli Toivonen^{1,2,3}, Elias Willberg^{1,2,3}. ¹Digital Geography Lab, University of Helsinki, ²Helsinki Institute of Sustainability Science (HELSUS), University of Helsinki, ³Institute of Urban and Regional Studies, University of Helsinki

14:45 **Geo-computational modeling for understanding urban cycling behavior**, Xiao Cai. Digital Geography lab, University of Helsinki, and Helsinki Institute of Urban and Regional Studies (Urbaria), University of Helsinki

15:00 **Complementing respiratory infection hospitalization data through Bayesian modelling**, Joel Siurua^{1,2}, Simopekka Vänskä². ¹Department of Mathematics and Statistics, University of Helsinki, ²Finnish Institute for Health and Welfare (THL)

15:15 Open discussion and closing words

”Living the DREAM” Seminar (Aalto University)

28th of May, 2026, at 09:00 – 16:00

Lecture room 1, F175a, Health
Technology House, Otakaari 3

<https://aalto.zoom.us/j/68367970854?pwd=SGLuPx7jbaudKZXzsTfycj7U6yGzuC.1>

Passcode: 482530

Session 1

- 09:00 Welcome
- 09:05 Vigdis Toresen: Total variation regularization with reduced basis in electrical impedance tomography
- 09:20 Jaakko Olkkonen: Computing measurement sensitivities in time- and frequency-domain optical tomography
- 09:35 Aada Hakula: A bilinear inverse problem with forward operator inaccuracy applied to diffuse optical tomography
- 09:50 Santeri Simanainen: Source localization of somatosensory evoked potentials recorded using stereotactic electroencephalography

Coffee break

Session 2

- 10:30 Jonne Annevirta: Advancing neuroscience for clinical need and impact: Physiological markers and neuroimaging for translational applications
- 10:45 Jesper Edström: Non-invasive functional brain network characterization in ANT DBS for epilepsy
- 11:00 Jussi Kiviluoto: Sensing and imaging of ultrasonically actuated surgical devices
- 11:15 Cain Santhan: Computation of cardiac timing intervals using continuous-wave resonant ultrasound sensing

Lunch

Session 3

- 13:00 Mahshid Pashootan: Data requirements for stable and reproducible EEG features in mild cognitive impairment
- 13:15 Emma Kamutta: Origami modeling and folding simulation via energy minimization
- 13:30 Kouros Mobredi: Accelerating bio-based foam development via Bayesian optimization
- 13:45 Xuliang Luo: Data-driven prediction of thin-film metallic glass forming ability via Bayesian classification and experimental verification in the Cu-Zr-Al system
- 14:00 Closing words

Coffee & informal discussion

Living the DREAM – seminar series

LUT University

Wednesday **June 3rd, 2026** at 9:55 – 15:20 in **Room 1325**, Lappeenranta campus

Zoom information

Meeting ID: 694 0092 8755

Passcode: 696262

<https://lut.zoom.us/j/69400928755?pwd=nS3iba4Qgx5NDQ9oGfIh6dboK5AoAk.1>

Schedule

Session 1

- 9:55 Welcome
- 10:00 Talk 1 Oula Kekäläinen: *"Relating geometric inverse problems for different families of generalized geodesics"*
- 10:15 Talk 2 Ville-Petteri Manninen: *"Bayesian inverse eigenvalue problems via surrogate modeling with sparse stochastic collocation"*
- 10:30 Talk 3 Emma Hannula: *"Scalable Bayesian deep learning via amortized inference and partial stochasticity"*
- 10:45 Coffee (30 min)

Session 2

- 11:15 Talk 4 Subhendu Pramanick: *"Hyperparameter estimation in Gaussian process modelling"*
- 11:30 Talk 5 Ammar Kheder: *"Deep learning for air quality forecasting"*
- 11:45 Talk 6 Samuel Repka: *"Mineral segmentation for scanning electron microscopy"*
- 12:00 Talk 7 Jarmo Flander: *"Mathematical phase retrieval"*
- 12:15 Lunch (1h)

Session 3

- 13:15 Talk 8 Sara Heikkinen: *"Remote sensing applications on lake quality monitoring"*
- 13:30 Talk 9 Sachitha Alwis Weerasinghe: *"Smart mobility and sports performance analytics"*
- 13:45 Talk 10 Jenni Köykkä: *"Lagrangian modeling of aerosol transport and chemistry in the Arctic"*
- 14:00 Talk 11 Samuel Agenorwoth: *"Uncertainty and computation in acoustic imaging of pipes"*
- 14:15 Coffee (30 min)

Session 4

- 14:45 Talk 12 Olivier Dondjio: *"Bayesian optimization with inhomogeneous smoothness"*
- 15:00 Talk 13 Akseli Suutari: *"Resource-efficient machine learning for particle jet tagging"*
- 15:15 Closing words

Living the DREAM -seminar
 Oulu, Linnanmaa campus, Room Lo124 (Areena)
<https://oulu.zoom.us/j/64048550868>

Schedule for Wednesday, June 10th, 9:00–15:00

Time	Speaker	Title
9:10	Opening	
9:15	Emile Vaysse	Quantitative MRI reconstructions under inhomogeneous B_0 field
9:30	Kalle Inget	Chemical Exchange Saturation Transfer MRI in Brain Tumor Imaging
9:45	Samu Majabacka	Normative T1 and T2 Relaxation Time Values of Healthy Knee Cartilage in a Single-Age, Population-Based Cohort
10:00 - 10:30	Coffee break	
10:30	Jemina Manninen	Space weather influence on ionospheric dynamics
10:45	Ayanew Shiferaw	Advanced methods for 3D observations of the ionosphere using the EISCAT3D radar
11:00	Antti Raasakka	Novel NMR methods for investigating chemical and physical properties of rubber compounds
11:15	Khaoula El Maddah	Computational methods for nonlinear inversion
11:30 - 13:00	Lunch	
13:00	Mansoure Giahi Sabour	A goal-oriented Bayesian algorithm to optimally select view angles in X-ray computed tomography
13:15	Dinidu Jayakody	Future Spectral CT
13:30	Antti Sällinen	On unsupervised iterative reconstructions and range characterization of 2D fan beam
13:45 - 14:15	Coffee break	
14:15	Manu Pradeep	Evaluation of iodine-based contrast agents in the micro computed tomography visualization and histology examination of swine hearts
14:30	Tero Hyvärinen	Underuse and Misapplication of Automatic Exposure Control Compromise Image Quality and Radiation Safety in Diagnostic Imaging
14:45	Minna Mannerkorpi	Raman spectroscopy for serum-based diagnosis and disease management in rheumatic diseases

”Living the DREAM” Seminar (Tampere University)

Wednesday, June 17, 2026, at 09:00 – 15:30. Room: TAU Arvo B342

<https://tuni.zoom.us/j/66126209958?pwd=0qClyLvmwIwJ32SElsNBeNuwVEcCaS.1>

Meeting ID: 661 2620 9958

Passcode: 421174

Session 1

- 09:00 Welcome
- 09:05 **Ivan Perez-Torres:** How Neuron Type, Morphology, and Myelination Shape Temporal Interference Responses: A Computational Study
- 09:20 **Katja Törmä:** Functional connectivity methods in brain connectivity estimation
- 09:35 **Elaheh Sabbaghi:** Acute scalp EEG signatures of anterior nucleus of the thalamus DBS in epilepsy
- 09:50 **Kaisla Walls:** Imaging engineered heart tissues with inverted selective plane illumination microscopy

Coffee break

10:05-10:30

Session 2

- 10:30 **Philipp Schiller:** A Bayesian Framework for Ill-posed Geometric Primitive Reconstruction from Point Clouds using Prior Information
- 10:45 **Shahab Baloochi:** Topology-Aware Deep Learning for Structural Analysis of Tree Point Clouds from Terrestrial Laser Scanning
- 11:00 **Ishan Sen:** AI-Driven Context-Aware AAC System: Framework Design, Prototype Development, and Personalization
- 11:15 **Etna Lindy:** Multiplicities of eigenvalues of resultant matrices

Lunch

11:30-13:00

Session 3

- 13:00 **Arash Zarrin Nia:** Improving EEG Source Localization Through Practical Head Modeling Choices
- 13:15 **Topi Pajala:** Exploratory Study for Radar Tomography of Dimorphos - the Asteroid Moon of 65803 Didymos

13:30 **G Harish Kaushik:** Hierarchical Bayesian modelling for predicting component failure

13:45 **Jetro Sihvonen:** Control of incompressible fluid flows

Coffee break

14:00-14.20

Session 4

14:20 **Dilshanie Prasikala:** Methodological Advancements in Standardized Kalman Filtering for EEG Source Localization

14:35 **Paavo Virtanen:** Computer modelling and simulations of phenotypic plasticity in electro-chemo-mechanical function of the heart

14:50 **Farnaz Javanpour:** Beyond Geometric Error: Learning Radiomic Consistency for Histology- μ CT Registration Validation

15:05 **Babatunde Abdullahi Olatunji:** Enhanced Source Localization Usin Bidirectional Deep Brain Stimulation Electrodes: A Comparative Study with Scalp EEG

15:20 Closing words